234 centers called hundis, which consist of temporarily occupied huts and
(361) cattle-pens. The hundis, located on western upper Nilgiri grasslands,
are inhabited while buffaloes and cattle are grazed near them in the
(221) dry season (Figure 2). The herds are brought westward in February or
March and are herded eastward in May or June. During the days of the
(177) British Raj and before large grassland tracts had been planted with
acacia or eutalyptus trees, there were more hundis than at present.
A listing of former hundis known to Ithalar and Manjanad Badagas, along
with abandoned hundi sites seen during fieldword, testify to this fact.
234 All persons using hundis must obtain grazing permits from the Madras
656 Forest Department in Ootacamund. A basic fee of 2.50 rupees and an
additional charge of 50 nayapice (100 nayapice equal one rupee) per
buffalo and 25 nayapice per cattle head is paid for a three-month per-
mit. Badagas using grasslands must follow all the Madras Forest
Department and Nilgiri Game Association regulations. Because the
(177) Madras Forest Department desires to end, slowly and tactfully, the
use of hundis, opportunities are pressed when Badagas living in them
are found trespassing the law. Grazing permits may then be revoked,
but a series of fines will also discourage Badagas from using the
western grasslands.

234 The occupance pattern at each hundi is basically the same, but
361 there is no distinct hut type associated with hundis. In establish-
ing Bhavani Hundi, used in 1963, Badagas took full advantage of ter-
rain (Figure 11). The hundi is located in an area with more grassland
than shola, where no trees have been planted yet (Plate III, C). The
cattle-pen is bound by steep slopes down to two streams, a piled stone

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234 361 (342) wall, and a bough barricade. The dwelling-hut has a low sleeping level, the necessary churn-pole for processing milk, and a fireplace set in a low platform. Five calf-huts surround the dwelling-hut, and there is also a separate calf-pen. All the hut walls were constructed with posts placed next to each other, and roofs were thatched. Kinkara Hundi, also used in 1963 and located close to Bhavani Hundi, is situated next to a stream and extensive shola (Figure 12). Post, branch, and log fences enclose a large circular cattle-pen, a smaller cattle-pen, and a calf-pen. There are three calf-huts next to a (343) dwelling hut. The calf-huts have post walls, and the dwelling-hut has stone walls. Grass thatching was placed over all the roofs.

During the 1963 season only one group of Badaga shepherds was 234 361 contacted by the writer (Plate III, D). The seven men taking turns in living at Kinkara Hundi were herding 92 buffaloes and 40 cattle. • (221) Livestock driven westward in February were to be taken back in May. The herders came from Ithalar and Poratti, where they left wives and other relatives during the dry season preceding the main agricultural season. 234 439 Milk was daily supplied by the Badagas to tea shops near the upper Bhavani dam site, where all activities ceased during the westerly monsoon. Clarified butter was sold in the Ootacamund shandy. (484) The daily walk to the tea shops was about six miles one way, while on periodic walks to Ootacamund by a different herder each time a distance exceeding 20 miles was covered. 262 (439) Grains and other edibles were obtained from homes, stalls near the dam site, and the Ootacamund shandy. 234 Milk and milk products, excluding clarified butter, also formed a part of their diet. Livestock were being milked only in the

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311 purchase cultivable land near Badaga communities have lowered the
(178) possibilities of land away from a community remaining uncultivated
(241) from year to year.

175 The agricultural cycle. Harkness (1832: 136-137) gave details
•221 concerning two yearly agricultural seasons, each of which coincided
241 with westerly or easterly monsoons. Italian, koda (Paspalum scrobiculatum L.), little, and finger millet, amaranth, barley, wheat, garlic, onions, and mustard were sown in May, then harvested from August into September. After this main season ground was sometimes left fallow until the following May, but some Badagas prepared soil almost immediately for chick peas (Cicer arietinum L.), fenugreek, lentil (Ervum lens L.), and poppies, which were all said to be harvested in December and January. Harkness, however, understated the maturation time for poppies--a period closer to nine months. Poppy seeds were probably planted in May, for cooler weather during dry months was the best time to extract poppy juice. In March and April seeds of gourds, pumpkins, and lablab beans were planted. From the first two species and their progeny produce was gathered for years. Lablab beans mature in five to seven months, depending upon the variety grown. Another millet identified as koralie (another variety of Italian millet?) and sown in March-April supposedly took nine months to mature, but it is doubtful that this grain grew so long before maturing.

221 The two agricultural seasons of the year have persisted. Sowing
241 and planting during the main season (karbokam) take place from March into April, and harvesting extends from July into September. In the

221 241 main season emphasis is placed on dry field food grain and cash crop production. Typical dry field crops are finger, italian, and little millet, amaranth (Amaranthus caudatus L. and A. hypochontriacus L.), barley (Hordeum distichon L. and H. vulgare L.), buckwheat (Fagopyrum sagittatum Gilib), potatoes, and other "English" vegetables. Koda millet is now rarely cultivated on the Nilgiris. Wheat (mostly Triticum aestivum L.) requiring drier conditions is grown in the main season on those sections receiving more rain during the easterly monsoon, but will be grown in the lesser season on other lands receiving more rain during the westerly monsoon. Many dry fields are left fallow between two main seasons, but kitchen gardens seldom are.

241 [221] During the lesser season (kadaibokaa) sowing and planting are performed from August into October, and harvesting extends from December into February. The lesser season is used primarily for growing seed potatoes and kitchen garden plants providing vegetables for home consumption or cash crops for sale. Assorted beans, cabbage, carrot, chick pea, coriander, fenugreek, garlic, lentil, maize, mustard, onion, pea, tomato, and turnip plants grown in kitchen gardens during the lesser season actually thrive in both seasons. Plant combinations within kitchen garden plots vary or sometimes remain the same from season to season (Figures 19 and 20). A kitchen garden plot in one season may also be covered by a dry field crop in the next. Perennial gourds and pumpkins are often grown on community middens or scattered odd plots. Little or no care need be given them, for seeds deposited on the ground from a few rotting fruits take root and form new generations.

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•221 Through irrigation farmers are now growing out of season crops, but irrigated crops still annually cover very small acreages. To take advantage of demands for potatoes during the tourist season reaching a peak in May and June, some farmers now plant potatoes from January into February. As early growth occurs during the dry season, potatoes would perish without irrigation at intervals. Expected mango showers during maturation aid in final development, and potatoes are harvested in May or June. Grain or "English" vegetables may then be grown without irrigation and harvested from September into October. Afterwards, land is left fallow until January or the main crop season (karbokam). Three harvests per year are obtained by a few farmers. Near the end of November, 1962, a man planted potatoes, kidney beans, and peas (Pisum sativum L.). Produce from these irrigated plants was harvested in March, 1963. Ground was prepared immediately for the main crop season, when unirrigated finger millet with mixed-in amaranth were sown. After harvesting of grain in August, potatoes with intercropped kidney beans or peas were grown without irrigation. The resultant harvest took place in November.

243 Past and present dry field crop production. By using several references to their agriculture, Badaga dry field crop production in the last century may be outlined.[1] Crops were cultivated then on both terraced and non-terraced land. Due mainly to the need for protection against livestock, plots near communities were fenced in or protected by deep ditches and piled brushwood walls. When ground left fallow for long periods was prepared for cultivation, turf was pared off,

243 In field preparation, natural vegetation which has spread into fallow fields is cleared, dried, and burned. Ashes are then spread over the earth. If available, livestock dung is applied. Soil is loosened by periodic plowings with a plow drawn by a single team or by several teams drawing plows simultaneously. Earth clods are broken with hoes and hoe-forks, and the same implements are used to work broadcast seed (221) into the soil. Sowing takes place mainly in June and July, so that harvesting will occur during a period of declining rainfall in October, November, and December. Finger millet is commonly grown, and little (241) millet is occasionally cultivated. Mustard may be mixed with the grain crop, and in one field I saw there were pumpkin vines growing over termite hills. Some fields are quite neglected, and others are weeded to varying degrees. In harvesting, sickles are used to remove grain heads. When finger millet is harvested, the grain heads are first processed in the same way that upper Nilgiri Badagas process them. (250) Grain is stored after being trampled out by buffaloes or cattle and dried in the sun. Men are responsible for heavy work in field preparation, plowing, sowing, and care of livestock trampling out grain. 243 462 Women, aided sometimes by children, do most of the other work associated with dry field cultivations.

Wet rice cultivation. During the dry season, after livestock 243 have eaten remaining rice stubble, exposed soils on fields become (231) hardened and cracked in the sun's heat. Livestock penned on changed (221) locations help fertilize the earth. Starting in April, after some mango showers have loosened field surfaces, the men prepare a few

243 fields. A single plow, usually pulled by two buffaloes, may be drawn
(221) back and forth over a field. At irregular intervals of days or even
(492) weeks the field will be replowed until it has been plowed four to six
times, with former plow lines being crossed at each replowing. If
several buffalo teams are available, plowing may be speeded by teams
(312) working simultaneously in a single file. Dikes to retain rainwater
must also be rebuilt or repaired with the aid of hoes (Figure 15),
and at least the final plowing is performed in fields well soaked by
(401) rainwater backed up behind the dikes. Drawn harrows aid in the level-
ing and mixing of soil. Puddlers are lastly used to flatten and
smooth surfaces about to receive rice seeds. Prior to broadcasting,
the seeds are usually mixed in a cowdung wash and left sitting for
several days in a small heap covered with leaves. Broadcast seeds
stick in mud and there take root. Plants may remain untouched until
harvesting, but most seeds take root in selected nursery fields from
which plants are later pulled up and transplanted.

(221) Because seeds are planted on nursery fields from April into
June, the transplanting period extends from June into August. It is
during this period that most fields are plowed, harrowed, and puddled
(Plate XII, E). In addition to supplemental dung fertilizer deposited
on the fields, green leaves are trampled into the mud by the feet of
(462) humans and livestock. Field preparation is men's work, but only women
transplant young rice plants. The young plants, pulled up after
approximately 40 days, are tied into bundles. By twisting off plant
tops, each bundle top is flattened. Bundles carried to prepared fields
are broken up individually as a field is planted. Two or three plants

B 243 B [462] (857) are planted together each time, and small clumps are spaced about nine inches to one foot apart. The amount of weeding performed by women and children before or after rice is transplanted depends upon the individuals concerned, but some weeding is usually done. As rice ripens, watch-huts built on stilts amidst fields or on hill slopes nearby are occupied in shifts by men, women, or children who make noises to drive away animals and birds. Harvesting takes place mainly in January, but rice is also harvested in December and February. Grain removal is facilitated by the fields drying up before harvesters, mainly women, start working with sickles. Cut rice stalks are carried in headloads by men and women to threshing floors near the houses. Muzzled bulls are strung together and forced to walk abreast around posts rising from threshing floors. Grain on hay laid beneath the bulls' feet is thus slowly threshed out. Months later, other grain is threshed in like manner from straw piled on stilted platforms or straw heaped about poles rising near threshing floors. Sun-dried grain is stored within large grain baskets or wooden chests placed in homes. The remaining threshed straw is fed to livestock or used for thatching.

B [221] B [482] B [251] [231]

B 463 434 439 Additional income. As far back as 1881 the Badagas were working on neighboring plantations, and a fair number of males are presently employed on plantations (Jennings 1881: 60). A few Badagas obtain income by selling milk to coffee and tea shops in nearby villages.

2. The Kotas

Ko 342 Most Kotas at Kalac, Cudalur, live in eight houses with brick